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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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THELEN REID & PRIEST LLP
FOUNDRY
P.O. BOX 640640
SAN JOSE, CA 95164-0640

EXAMINER

KIM, WESLEY LEO

ART UNIT	PAPER NUMBER
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2688

DATE MAILED: 10/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/785,596

Applicant(s)

SINHA, VISHAL

Examiner

Wesley L. Kim

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims such as 5, 6, 18 recites the limitation "ascertaining if the roaming..." in line 2.

There is insufficient antecedent basis for this limitation in the claim. Claim 1 and 3 do not recite the limitation "ascertaining" anywhere in the claims. The examiner asks the question, ascertaining what? For the purposes of examination the examiner will assume all usage of the limitation "ascertaining" is "discovering".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1,2,7,8,16,23,24,29,30, and 38 rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al (U.S. Patent 6535493 B1) in view of Rue (U.S. Pub. 2003/0185172 A1).

Regarding Claim 1,16, 23, and 38, Lee teaches handling a roam request at a first switch (Col.8:13-14, first switch is the home agent), the roam request sent by a second switch and containing information about a client that is roaming to the second switch (Col.8:8-12, second switch is the foreign agent), tunneling

traffic for the client to the second switch if the first switch is a home agent for the client (Col.6:35-44); and sending a roam reply to the second switch (Col.8:13-14), however Lee **is silent on** determining if the first switch is a home agent for the client; removing information regarding the client from the first switch if the first switch is not a home agent for the client.

Rue teaches that the second switch (i.e. second mobile access server 315) broadcasts Home mobile access server Find request message to surrounding mobile access servers (Par.46:1-6). A determination of which first switch (i.e. surrounding servers) is the home agent is performed and if the switch is deemed as not being the home agent, then it is obvious that the information regarding the client would be removed or discarded from first switch.

To one of ordinary skill in the art, it would have been obvious to modify Lee, such that a first switch (i.e. home agent) is determined and then removing the information regarding the client if the first switch is not a home agent, to provide a method of obtaining more information on the client from the first switch (i.e. home agent) and to provide a method of freeing-up resources (i.e. memory) of the non-home agent first switches.

Regarding Claim 2 and 24, the combination as discussed above teaches all the limitations as recited in claim 1 and 23, respectively, and Rue further teaches roam reply contains network configuration information regarding the client (Par.52:7-12 and Par.53:5-11, internet protocol address of the mobile node (i.e. client) is network configuration information regarding the client, with this

information, data may be appropriately routed to the client through both the home and foreign networks).

Regarding Claim 7 and 29, the combination as discussed above teaches all the limitations as recited in claim 1 and 23, respectfully, and Lee teaches that a roam reply indicates failure if something went wrong during the process, otherwise it indicates success (Col.8:13-15, roam request granted indicates success, roam request denial indicates failure).

Regarding Claim 8 and 30, the combination as discussed above teaches all the limitations as recited in claim 1 and 23, respectfully, however the combination **is silent on** the roam request is an Inter Switch Roaming Protocol (ISRP) roam request.

Lee teaches a registration request (i.e. roaming request) is a UDP protocol registration request (Col.10:35-45). One of ordinary skill in the art would find it obvious to use an alternative protocol well known in the art, an inter-switch link protocol (i.e. ISRP), for routing data between VLAN switches.

2. Claim 9-11, 20, 31-33, 37, and 39 rejected under 35 U.S.C. 103(a) as being unpatentable over Rue (U.S. Pub. 2003/0185172 A1).

Regarding Claim 9,20,31, and 39, Rue teaches receiving a move request (Par.44:9-12, handover request message) from an access point (Par.44, fourth access point) associated with the switch (Par.45; second mobile access server); and sending a roam request to all peer switches in the same mobility domain as the switch (Par.46:1-6). To the examiner a home mobile access server find

request message (MAS) is a roam request since both are trying to obtain information on the mobile node from the home switch so that data may appropriately be routed to the roaming mobile node, however Rue **is silent on** sending a roaming request to itself.

Rue teaches that the switch itself is checked to determine if information on the mobile node is stored in the database (Par.45;4-7, i.e. a roam request is sent to itself).

To one of ordinary skill in the art, it would have been obvious to modify Rue, such that a roaming request is sent to itself, to provide a method of obtaining information on the mobile node from its home switch, where the switch may or may not be the home switch, so that data may appropriately be routed to the roaming mobile node.

Regarding Claim 10,11,32,33, and 37, Rue teaches all the limitations as recited in claim 9, 31, and 33, and although Rue **is silent on** the move request being a Switch Access Point Protocol (SAPP) move request or ISRP roam request.

Rue teaches the mobile access server (i.e. switch) controls access points and supports signal protocol (Par.27;10-11). To one of ordinary skill in the art, it is obvious that signal protocol used for the roam request may be of type Switch Access Point Protocol (SAPP) or ISRP.

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3. Claim 35 rejected under 35 U.S.C. 103(a) as being unpatentable over Rue (U.S. Pub. 2003/0185172 A1) in view of Lee et al (U.S. Patent 6535493 B1) and Edney et al (U.S. Pub. 2004/0255033 A1).

Regard Claim 35, Rue teaches all the limitations as recited in claim 33, however Rue **is silent on** means for trapping all address resolution protocol (ARP) packets from the client; and means for sending an ARP reply to the client with a default router address for the switch.

Lee teaches trapping all address resolution protocol packets from the client (Col.11:30-32) and means for sending an ARP reply to the client with a default router address for the switch (Col.11:20-22).

Edney teaches a client device sending a ARP Request an access point and sending a ARP reply back to the client device (Par.29:6-10).

To one of ordinary skill in the art it would have been obvious to modify, Rue with Lee and Edney, since they are from similar search areas, transmitting data packets over wireless networks, such that there exists a means for trapping all address resolution protocol (ARP) packets from the client; and means for sending an ARP reply to the client with a default router address for the switch, to provide a method of securely transmitting data to appropriate destinations.

4. Claim 3,17,18 rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al (U.S. Patent 6535493 B1) and Rue (U.S. Pub. 2003/0185172 A1) in further view of Eglin (U.S. Pub.2003/0210671 A1).

Regarding Claim 3, 17, 25, Lee and Rue teach all the limitations as recited in claim 1, 16, and 23, respectively, and Lee teaches discovering if the first switch is the same as the second switch (Col.8:30-32); performing said determining, removing, and tunneling only if the first switch is not the same as the second switch (See Claim 1); setting the first switch as the foreign agent if the first switch is the same as the second switch (Col.8:23-25, the foreign agent is dynamically assigned, to a skilled artisan, it is obvious that the first switch will be set as a foreign agent even if it is the same as the second switch); however the combination **is silent on** and updating a virtual network tag corresponding to the client in a data structure controlled by the first switch if the first switch is the same as the second switch.

Eglin teaches the access port/VLAN may change when the mobile station roams between AP reception areas, e.g. from first access point to another access point and if the access port/VLAN is unchanged (i.e. meaning the first and the second switch are the same), then a data packet is updated with the appropriate VLAN tag and switched to the appropriate identified core port (Par.28:16-22).

To one of ordinary skill in the art, it would have been obvious to modify Lee and Rue, such that a virtual network tag corresponding to the client in a data structure controlled by the first switch is updated if the first switch is the same as the second switch, to provide a method of maintaining updated connectivity of

the mobile devices by updating the VLAN tag and associating it to the correct VLAN.

Regarding Claim 4 and 26, the combination as discussed above teaches all the limitations as recited in claim 3 and 25, respectively, and Eglin further teaches updating includes updating a virtual local area network (VLAN) tag corresponding to the client with a new VLAN tag corresponding to a new VLAN to which the client has roamed (Par.28;22-26, VLAN tag is changed).

Regarding Claim 5,18, and 27, the combination as discussed above teaches all the limitations as recited in claim 3, 17, and 25, respectively, and Lee further teaches discovering if the roaming being attempted is layer 2 or layer 3 roaming (Col.8;30-35); executing said performing and setting only if the roaming being attempted is layer 3 roaming (See Claim 3, performing and setting only performed when mobile device roams to an access point in a foreign network, i.e. layer 3 roaming), and Rue further teaches removing information regarding the client from a data structure controlled by the first switch (Par.52;7-12 and Par.53;5-11, internet protocol address of the mobile node (i.e. client) is removed from the first switch and sent to the second).

Regarding Claim 6,19, and 28, the combination as discussed above teaches all the limitations as recited in claim 5,18, and 27, respectively, and Rue teaches checking if the client is known to the first switch (See Claim 1, determining if first switch is a home agent to the client); performing said discovering, executing, and removing only if the client is known to the first switch

(See Claim 5, discovering, executing, and removing only done if first switch is home agent to the client, i.e. client is known to the first switch).

Regarding Claim 36, Rue and Lee teach all the limitations as recited in claim 33, however the combination **is silent on** the move reply including a new VLAN identification.

Eglin teaches updating includes updating a virtual local area network (VLAN) tag corresponding to the client with a new VLAN tag corresponding to a new VLAN to which the client has roamed (Par.28;22-26, VLAN tag is changed).

To one of ordinary skill in the art, it would have been obvious to modify Rue and Lee, such that a virtual network tag corresponding to the client in a data structure controlled by the first switch is updated if the first switch is the same as the second switch, to provide a method of maintaining updated connectivity of the mobile devices by updating the VLAN tag and associating it to the correct VLAN.

5. Claim 12,15,21,34, and 40 rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al (U.S. Patent 6535493 B1) in view of Rue (U.S. Pub. 2003/0185172 A1) and Strachan et al (U.S. Pub 2004/0105440 A1).

Regarding Claim 12, 21, 34, and 40, Lee teaches handling a roam reply at a switch (Col.8;13-15, foreign agent handles roam reply), determining if the roam reply indicates that the handling of a roam request was successful (Col.9;57-61, sends a predetermined code to allow determination of success or failure of roam request); sending a reply to a corresponding access point

indicating failure if the handling of said roam request was not successful (Col.9;57-61, sends a code specifying reason of denial); setting the switch as a Foreign Agent for the client if the handling of said roam request was successful (Col.8;32-34, when mobile unit moves to a new subnet, (i.e. under the control of a new router or switch) other than its home (i.e. home router or switch), this new subnet (i.e. the new switch) becomes its foreign subnet, i.e. foreign agent); and sending a move reply to said corresponding access point if the handling of said roam request was successful (Col.8;13-15), however Lee **is silent on** the roam reply having information regarding a client that is roaming to the switch; and switching a router designated by the client with a default router for the switch if the handling of said roam request was successful.

Rue teaches the roam reply having information regarding a client that is roaming to the switch, (Par.52;7-12 and Par.53;5-11, internet protocol address of the mobile node (i.e. client) is information regarding the client).

Strachan teaches switching a router designated by the client with a default router for the switch if the handling of said roam request was successful (Par.28 and Par.42, the edge switch is the designated router and the core router is the default router).

To one of ordinary skill in the art it would have been obvious to modify Lee with Rue and Strachan, since they are from the same search areas, viz. supporting mobility between subnetworks, such that the roam reply has information regarding a client that is roaming to the switch; and switching a router

designated by the client with a default router for the switch if the handling of said roam request was successful, to provide a method of enabling seamless roaming of mobile devices among wireless networks.

Regarding Claim 15, the combination as discussed above teaches all the limitations as recited in claim 12, however the combination **is silent on** move reply being a SAPP move reply.

Rue teaches the mobile access server (i.e. switch) controls access points and supports signal protocol (Par.27;10-11). To one of ordinary skill in the art, it is obvious that signal protocol used for the roam request may be of type Switch Access Point Protocol (SAPP).

6. Claim 13 and 22 rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al (U.S. Patent 6535493 B1), Rue (U.S. Pub. 2003/0185172 A1), and Strachan et al (U.S. Pub 2004/0105440 A1) in further view of Edney et al (U.S. Pub. 2004/0255033).

Regarding Claim 13 and 22, Lee, Rue, and Strachan teach all the limitations as recited in claim 12 and 21, respectively, however the combination **is silent on** trapping all address resolution protocol (ARP) packets from the client; and sending an ARP reply to the client with a default router address for the switch.

Lee teaches trapping all address resolution protocol packets from the client (Col.11;30-32) and means for sending an ARP reply to the client with a default router address for the switch (Col.11;20-22).

Edney teaches a client device sending a ARP Request an access point and sending a ARP reply back to the client device (Par.29;6-10).

To one of ordinary skill in the art it would have been obvious to modify, Lee, Rue, and Strachan with Edney, since they are from similar search areas, transmitting data packets over wireless networks, such that there exists a means for trapping all address resolution protocol (ARP) packets from the client; and means for sending an ARP reply to the client with a default router address for the switch, to provide a method of securely transmitting data to appropriate destinations.

7. Claim 14 rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al (U.S. Patent 6535493 B1), Rue (U.S. Pub. 2003/0185172 A1), and Strachan et al (U.S. Pub 2004/0105440 A1) in further view of Eglin (U.S. Pub. 2003/0210671 A1).

Regarding Claim 14, Lee, Rue, and Strachan teach all the limitations as recited in claim 12, however the combination **is silent on** the move reply includes a new VLAN identification.

Eglin further teaches updating includes updating a virtual local area network (VLAN) tag corresponding to the client with a new VLAN tag corresponding to a new VLAN to which the client has roamed (Par.28;22-26, VLAN tag is changed).

To one of ordinary skill in the art, it would have been obvious to modify Lee, Rue, and Strachan, such that a virtual network tag corresponding to the

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client is changed, to provide a method of maintaining updated connectivity of the mobile devices by changing the VLAN tag and associating it to the correct VLAN.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wesley L. Kim whose telephone number is 571-272-7867. The examiner can normally be reached on Monday-Friday 9:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on 571-272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

WLK


GEORGE ENG
PRIMARY EXAMINER